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10/580,830	05/26/2006	Takashi Kenmoku	03500.120467.	7588
5514 7590 08/14/2008 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112				
EXAMINER				
DOLLINGER, MICHAEL M				
ART UNIT		PAPER NUMBER		
4171				
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08/14/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/580,830

**Applicant(s)**

KENMOKU ET AL.

**Examiner**

MICHAEL DOLLINGER

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 3, 5-8 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 05/26/2006, 03/14/2007, 04/11/2008 and 08/05/2008
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_



**DETAILED ACTION*****Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1, 2, 4 and 9 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 and 6 of copending Application No. 11/165,356 and copending Application No. 11/165,357. Although the conflicting claims are not identical, they are not patentably distinct from each other because it is clear that all the elements of the instant claims 1, 2, 4 and 9 are to be found in the copending claims 1-4 and 6, so the instant application fully encompasses the copending claims. The difference between the instant claims and the copending claims lies in the fact that the copending claims include many more elements and is thus much more specific. Thus the invention of the copending claims is in effect

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a "species" of the "generic" invention of the instant claims. It has been held that the generic invention is "anticipated" by the "species". Since the instant claims are anticipated by the copending claims, they are not patentably distinct from the copending claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

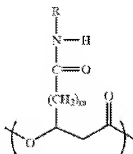
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mihara et al. (WO 2004/061530) in view of Moore et al. (Moore, John W.; Stanitsky, Conrad L.; Jurs, Peter C. Chemistry: The Molecular Science. Pages 682-683. Brooks/Cole: Toronto 2002). Please note that national stage US PGPUB US 2006/0014921 is used as an equivalent to WO 2004/061530.

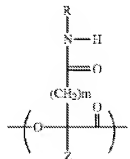
5. Regarding claims 1 and 2, Applicants' formulae 1, 2, 3, 4A and 4B correspond to formulae 1, 2, 3, 4A and 4B of Mihara et al. [claims 1-4]. The difference between difference between Applicants' formulae and the formulae of Mihara et al. lies in the facts that the formulae of Mihara et al. 1) contain an additional CH<sub>2</sub> group in the PHA

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backbone between the pendant group and single-bonded oxygen and 2) do not contain a Z group (which is a linear or branched alkyl group), as shown below in each formula 1:

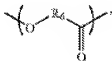


Formula 1 of Mihara et al.

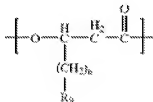


Formula 1 of instant claims.

6. Regarding claims 4 and 9, Applicants claim the polyhydroxyalkanoate further comprising a unit represented by Applicants' formula 6:



wherein  $R_6$  represents, *inter alia*, a linear or branched alkylene group which may be substituted with an aryl group. Mihara et al. disclose the polyhydroxyalkanoate further comprising a unit of the formula 9:



wherein  $n$  is an integer from 1 to 8 and  $R_9$  represents, *inter alia*, a residue of a phenyl structure [claim 9].

7. Regarding the difference 1) wherein the formulae 1-4B of Mihara et al. contain an additional CH<sub>2</sub> group in the PHA backbone, Examiner takes the position that these polymer backbones are homologues of each other, i.e. the main structural difference is a small difference in number of CH<sub>2</sub> groups. Homologues are expected to have similar properties and functions. A *prima facie* case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. For obviousness pertaining to close structural similarity between chemical compounds see MPEP § 2144.09.

8. Regarding the difference 2) wherein the Applicants' formulae 1-4B contain a substituent Z group representing a linear or branched alkyl group, Mihara et al. do not specifically disclose a polyhydroxyalkanoate with a linear or branched alkyl group substituent on the PHA backbone. However, Mihara et al. do disclose the addition of silica fine powder to the toner composition that comprises the PHA polymer in order to impart hydrophobicity to the toner which in turn imparts improved flowability [paragraph 0137] and control of chargeability [paragraph 0165].

9. Moore et al. teach that the addition of hydrocarbon chains (alkyl groups) to polar molecules increases the hydrophobicity of the overall molecule and will even make a polar molecule almost completely hydrophobic [page 682 5th paragraph through page 683 1st paragraph].

10. The replacement of a hydrogen bonded to a carbon chain with a linear or branched alkyl group, particularly small alkyl groups such as methyl, ethyl, etc., is commonplace in the art and imparts hydrophobicity to the compound. The hydrophobicity is a result of the increased nonpolar hydrocarbon content. The addition of alkyl groups to a hydrophilic compound often results in a compound with both hydrophilic and hydrophobic properties also known as an amphiphilic compound. One would have imparted hydrophobicity/amphiphicity to the PHAs of Mihara et al. in order to receive the disclosed benefits on hydrophobicity or to compatibilize the PHAs with the hydrophobic silica fine powder in the toner composition.

11. It would have been obvious to one having ordinary skill in the art to have added linear or branched alkyl Z groups to the PHA polymers of Mihara et al. because Mihara et al. teach that it is within the skill of the art to produce a toner composition with PHA polymers substituted with hydrophilic substituents including amido and sulfonic groups and Moore et al. teach that it is within the skill of the art to replace hydrogen atoms bonded to a carbon chain with alkyl groups to impart hydrophobicity/ amphiphilicity to a compound. One would have done this in order to improve flowability, control chargeability, and compatibilize the PHA polymers with hydrophobic toner constituents. Absent any evidence to the contrary, there would have been a reasonable expectation of success in adding linear or branched alkyl group substituents to the PHA backbone chain of Mihara et al.



***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL DOLLINGER whose telephone number is (571)270-5464. The examiner can normally be reached on Monday - Thursday 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art Unit 4171

MICHAEL DOLLINGER  
Examiner  
Art Unit 4171

/MMD/